

## **Remarks**

### **I. Summary of Office Action**

The Examiner has rejected claims 1-5, 12, and 20-21 as being unpatentable over U.S. Patent No. 6,460,036 (Herz) in view of U.S. Patent No. 6,654,735 (Eichstaedt); claims 6, 8-11, 13-15, and 22 as being unpatentable over Herz in view of Eichstaedt further in view of U.S. Patent No. 6,088,707 (Bates); claims 16-19 as being unpatentable over Herz in view of Eichstaedt further in view of Bates and further in view of U.S. Patent No. 5,724,567 (Rose); claims 23-26 as being unpatentable over Herz in view of Eichstaedt in view of Cooper et al, MCSE Supporting and Maintaining a Windows NT® Server 4.0 Network (Cooper).

### **II Summary of Claimed Subject Matter**

Applicant has amended the claims as shown above. Now pending are claims 6, 12, and 15-20, and 27-29. Claims 6, 12, and 27 are independent and the rest are dependent.

The invention as claimed is directed to a method for measuring a user's interest in a given subject. Each independent claim provides for establishing a "capped page keyword count" for each web page sent to the user by counting the number of keywords related to the given subject. The capped page keyword count is capped such that its value is not greater than a predetermined maximum number of keywords.

The capped page keyword count is then summed to establish a count of keywords that is "not greater than the count of web pages multiplied by the predetermined maximum number of keywords." New claim 29 defines the predetermined maximum number of keywords as 10.

Independent claim 12 also includes limitations requiring establishment of (i) a total page count representing the number of web pages sent to a user; (ii) a subject-specific page count

representing the number of web pages sent to the user that have a threshold number of keywords related to the subject and; (iii) the count of keywords related to the subject that appear in the web pages. In claim 12, these values are combined to establish a measure of the user's interest in the subject matter. Dependent claim 15 then provides that values (i)-(iii) be combined by multiplying the count of keywords (K) by the subject-specific count (S) divided by the total page count (P).  $[(K)(S)/(P)]$ .

### **III. Response to Obviousness Rejections.**

The amendments to the claims provide additional reasons for allowance and moot the Examiner's prior rejection. Under M.P.E.P. § 2143, in order for a combination of references to render a claim obvious, the combination must disclose or suggest all of the elements of the claim. Applicant respectfully submits that because the cited combinations fail to disclose or suggest all the elements of the claims, the rejections should be withdrawn.

The following remarks specifically point out a number of failings of the references and several of the distinct features of the invention as claimed.

**a) The Cited References Do Not Disclosure or Suggest Capping the Keyword Count at a Predetermined Maximum Number of Keywords for Each Web Page**

As amended, each independent claim includes establishing a capped page keyword count for each web page such that the count per page is capped at a predetermined maximum number of keywords. Beneficially, the cap may provide a mechanism for reducing skew and reducing server load.

The Examiner indicated that neither Herz nor Eichstaedt disclose details regarding capping the count at a predetermined maximum number of keywords. However, the Examiner asserted that Bates' disclosure of a threshold keyword trigger teaches a capping limitation.

Applicant respectfully disagrees. The Bates threshold is used to trigger a user notification indicating that the changes to a document exceed a threshold. Such an application of a threshold trigger does not disclose or suggest capping a keyword count for each web page at a predetermined maximum.

First, the Bates threshold does not disclose capping: A threshold trigger takes an action when its keyed variable reaches a specified value. After that, the keyed variable may continue to increase its value. Conversely, a capped value will not rise above the specified value. As such in the claimed invention, capping serves to limit the recorded value of the count of keywords associated with the given subject.

Second, Bates is focused on changes in a document, and the Bates threshold is a binary measure of the *difference within a single document* at two different times (i.e., relative change). This is different from the claimed capped value that is a unitary measure of a count of keywords in a web page associated with a given subject.

Because the cited references do not disclose or suggest capping a keyword count at a predetermined maximum number of keywords for each web page, Applicant submits that the references cannot obviate the independent claims as amended or their dependents.

**b) The References Do Not Relate Keywords to Subjects**

Each pending claim includes a limitation that associates the number of keywords in a document with a given subject. The Examiner indicated that two references, Herz and Eichstaedt, relate to a user's interest in a given subject or category. These references, however,

do not disclose or suggest the claimed limitations – and thus do not obviate the claims under Section 103(a).

The Herz reference is related to customization of electronic newspapers and provides for the use of word counts and term frequency. (Herz, Abstract, Col. 13, lines 5-17). Herz notes that it is possible to “correlate” synonym words by modifying its source texts – so that, for instance, “JFK” becomes “John F. Kennedy” throughout a document. (Herz, Col. 15, lines 25-34). Herz also provides an example application in a specific subject area (matching car buyers with car sellers). (Herz, col. 17, lines 10-24).

In the latest Office Action, the Examiner concluded that the Herz operation expressly relates keywords to areas of interest of the user. (*Citing Herz, Col. 15, line 34 to Col. 16, line 1*). Such a conclusion, however, cannot be drawn from the cited text. At best, the cited text in Herz provides guidance for “pre-alteration” of the text of individual documents to ensure that synonyms are treated in an identical fashion. Thus, “JFK” is replaced with “John F. Kennedy” and “staples” is replaced with “staple.” ***This Herz pre-alteration method does not equate with the claimed linking of specific keywords with specific subjects.***

Rather than explicitly linking keywords to subjects, Herz consistently sticks to a term frequency (TF) measure that is based on a count of the bare words – not a count of words related to a given subject. (*See Herz Col. 13, lines 5-11*). Herz delves into the details of its algorithm for monitoring page count at Col. 58, line 55 to Col. 60, line 11. In that section, Herz once again looks at a “word frequency” but does not count the number of keywords related to a given subject.

The Examiner also appears to have equated the Herz “similarity measure” as an explicit association of keywords related to a given subject. (*See Herz, col. 17, lines 10-24*). In fact, the Herz similarity measure is calculated through a complex matrix calculation – finding the

distance,  $d$ , between two attribute vectors each associated with a textual document. (See Herz, Col. 58, line 55 to Col. 60, line 55). It is clear that the similarity measure is not an explicit association of keywords related to the given subject. As such, Herz' discussion of using the similarity measure to compute the similarity between a buyer and seller is not applicable to an obviousness analysis. (Herz. Col. 17, lines 10-28).

In the area of outbound information analysis, Eichstaedt discloses a taxonomy tree with leaf categories and inner categories and "maintains a weight vector [of interest level in the category],  $w$ , to measure the user's current interest level in each category." In Eichstaedt, the "weighting" occurs across multiple outbound queries to determine the user's current interest level in each category. *However, in Eichstaedt, the subject/category is assigned and is associated with the document as a whole rather than with individual keywords.*

The approach of Herz and Eichstaedt is in stark opposition to the claimed invention. In the claimed invention, the document or query as a whole is not assigned to a subject. Rather, keywords within the document are related to the given subject. These keywords are counted (claims 1-29), their threshold established (claim 12), capped (claims 6, 12, and 27), the counts summed (claim 6, 12, and 27), and otherwise combined (*see* claims 12 and 15) in order to better establish the user's interest in the given subject.

Because the cited references do not disclose or suggest a relation between keywords and the subject, the references cannot obviate the invention as claimed.

**c) The References Do Not Disclose or Suggest a Count Keyword Threshold**

Claims 12 and 27 provide for establishing a count of web pages sent to a user that each contain *at least a threshold number of keywords related to the given subject*. Beneficially, the threshold number may allow for greater specificity in identifying interest in a given subject and also may reduce server load, for instance.

The Examiner indicated that the Herz discussion of a threshold in its similarity measure at Col. 17, lines 10-24 would obviate the threshold claimed limitation. Applicant respectfully disagrees. As indicated above, the Herz similarity measure, which measures the distance between two attribute vectors, is not related to the claimed “count of the number of keywords related to the given subject.” The Herz threshold is a binary threshold measured as between two documents to determine whether the two documents are sufficiently matched. On the other hand, the claimed threshold is unitary and looks to a count of keywords associated with the given subject.

Bates also discloses a threshold – a threshold used to trigger a user notification indicating that a document has changes that are measured above the threshold. (Bates, Abstract, Col. 11 lines 32-40 and Col 12, lines 40-55). As described above, the Bates threshold is critically different from that claimed. First, Bates is focused on changes in a document, and the threshold is a binary measure of the difference between a given document at two different times (relative change). This is different from the claimed threshold that is a unitary measure looking to a count of keywords associated with a given subject. Second, the Bates keyword trigger fails to associate any keywords with a given subject.

Because none of the cited references disclose or suggest taking an action based on whether a web page has *at least a threshold number of keywords related to the given subject*, the references cannot obviate independent claims 12 and 27 or their dependents.

**d) The Invention Provides a Unique Combination of Values as a Measure of User’s Interest in a Given Subject**

Independent claim 12 provides for combining (i) a subject-specific page count value, S, that represents a number of web pages sent to the user that each contain at least a threshold

number of keywords related to the given subject and (ii) a keyword count value, K, that represents a number of keywords related to the given subject that appear in web pages sent to the user. According to the claim, these values, along with a total page count, P, are used in combination to establish a measure of the user's interest level in the given subject.

Dependent claim 15 provides that the value be combined by multiplying the count of keywords associated with the subject (K) with the subject-specific count (S) and then divide by the total page count (P).  $[(K)(S)/(P)]$ .

As discussed above the references do not disclose either the count of keywords related to the given subject (K) or the number of web pages received that contain the threshold number of keywords related to the given subject (S).

Additionally, the *Examiner has not cited any reference that uses the three values in combination to establish a measure of the user's interest level in the given subject*. Because claim 12 is specifically limited to establishing a measure based on a method of combining the three values, Applicant asserts that a reference disclosing or suggesting such a method of combining must be identified in order to obviate the claim. Up to now, no such reference has been identified. *As noted by the Examiner, Herz discloses several algorithms. However, the Herz algorithms do not involve combining the three claimed measures.*

Claim 15 provides a further limitation to claim 12 by reciting a specific algorithm used in the method of combining the three values:  $(K)(S)/(P)$ . The Examiner has not cited to any reference that discloses or suggests this particular algorithm. In fact, the limitation of claim 15 was not specifically addressed by the Examiner at all.

As such, Applicant submits that the Examiner as clearly not made out the requisite *prima facie* case of obviousness of claim 12 or claim 15 or their dependents.

#### **IV. Conclusion**

In view of the foregoing, Applicant submits that claims 6, 12, and 15-20 and 27-29 are now in condition for allowance, and Applicant therefore respectfully request favorable reconsideration.

Respectfully submitted,

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